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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,476	09/20/2006	Yoshiaki Kojima	PC 3218.01 US	3223

52737 7590 05/12/2008

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EXAMINER	
SMYTH, ANDREW P	
ART UNIT	PAPER NUMBER
2881	

MAIL DATE	DELIVERY MODE
05/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,476	KOJIMA, YOSHIAKI	
	Examiner	Art Unit	
	ANDREW SMYTH	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2008*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/20/2006;10/20/2006* .
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1, 3, 5, and 7 were amended by the applicant.

2. Claims 9-13 are new claims added by the applicant.

Response to Arguments

1. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Deeman et al. (US 7,218,470).

Deeman discloses the following:

Regarding applicant's claim 1. (Currently Amended) An electron beam lithography apparatus (title) for concentrically drawing a plurality of circles on a substrate (column 1, line 63 to column 2, line 12) by applying an electron beam while rotating the substrate, comprising:

a beam deflection portion for deflecting the electron beam to change an irradiation position of the electron beam;

a synchronization signal generation portion for generating a synchronization signal in synchronization with the rotation of the substrate (col. 2, lines 5-12)

a controller for controlling the beam deflection portion on the basis of the synchronization signal in order to deflect the electron beam in a rotational radial direction of the substrate and in a rotational tangential direction of the substrate opposite to a rotational direction of the substrate, while drawing transition is performed from one circle to another circle; and

a beam cutoff portion for cutting off the irradiation of the electron beam on the substrate, for a period when the electron beam is deflected in the rotational radial direction (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 2. (Original) The electron beam lithography apparatus according to claim 1, wherein the controller deflects the electron beam in the rotational tangential direction of the substrate being the same direction as the movement of the substrate before drawing transition is performed from the one circle to the another circle (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 3. (Currently Amended) The electron beam lithography apparatus according to claim 1, wherein the controller deflects the electron beam in the rotational tangential direction so as to overwrite a portion of the circle including a drawing connection position (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 4. (Original) The electron beam lithography apparatus according to claim 1, wherein the beam cutoff section varies an intensity of the electron beam applied to the substrate at a predetermined rate before or after a period when the electron beam is deflected in the rotational radial direction (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 5. (Currently Amended) An electron beam lithography method for drawing a plurality of circles on a substrate by applying an electron beam while rotating the substrate, the method comprising:

a transition controlling step of deflecting the electron beam in a rotational radial direction of the substrate and in a rotational tangential direction of the substrate opposite to a rotational direction of the substrate, upon performing drawing transition from one circle to another circle; and

a beam cutoff step of cutting off the irradiation of the electron beam on the substrate, for a period when the electron beam is deflected in the rotational radial direction (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 6. (Original) The electron beam lithography method according to claim 5, wherein the transition controlling step includes a step of deflecting the electron beam in the rotational tangential direction of the substrate being the same direction as the movement of the substrate before drawing transition from the one circle to the another circle is performed (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 7. (Currently Amended) The electron beam lithography method according to claim 5, wherein the transition controlling step deflects the electron beam in the

rotational tangential direction to overwrite a portion of the circle including a drawing connection position (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 8. (Original) The electron beam lithography method according to claim 5, comprising the step of varying an intensity of the electron beam applied to the substrate at a predetermined rate before or after a period when the electron beam is deflected in the rotational radial direction (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 9. (New) An apparatus comprising a drawing controller (figure 6, 71, 43) for applying an electron beam on a substrate to draw a plurality of circles, configured for deflecting the electron beam in a rotational radial direction of the substrate and in a rotational tangential direction of the substrate opposite to a rotational direction of the substrate, upon performing drawing transition from one circle to another circle (col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 10 (New) The apparatus recited in claim 9, wherein the drawing controller is further configured for cutting off the irradiation of the electron beam on the substrate, for a period when the electron beam is deflected in the rotational radial direction col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 11. (New) The apparatus recited in claim 9, wherein before the drawing transition from the one circle to the another circle is performed, the

electron beam is deflected in the rotational tangential direction of the substrate in the same rotational direction of the substrate col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 12. (New) The apparatus recited in claim 9, wherein the drawing controller is configured for deflecting the electron beam in the rotational tangential direction to overwrite a portion of the circle including a drawing connection position col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Regarding applicant's claim 13. (New) The apparatus recited in claim 9, wherein the drawing controller is configured for varying an intensity of the electron beam applied to the substrate at a predetermined rate before or after a period when the electron beam is deflected in the rotational radial direction col. 8, lines 20 to col. 9, line 61; (figure 6); inherent in the device).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent prior art is closely related art that individually or in combination could be considered grounds for rejection. See references cited for a listing of the pertinent prior art found and the prior art found.

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Smyth whose telephone number is 571-270-1746. The examiner can normally be reached on 7:30AM - 5:00PM; Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. S./
Examiner, Art Unit 2881

/ROBERT KIM/
Supervisory Patent Examiner, Art Unit 2881